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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/560,819	04/28/2000	Hiroshi Oagawa	1982-0149P	5103
7590 05/18/2004 Birch Stewart Kolasch & Birch LLP PO Box 747 Falls Church, VA 22040-0747			EXAMINER ROY, SIKHA	
			ART UNIT 2879	PAPER NUMBER

DATE MAILED: 05/18/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/560,819

Applicant(s)

OAGAWA, HIROSHI

Examiner

Sikha Roy

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AW

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 January 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,3-8,10,12 and 14 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1,3-8,10 and 12 is/are allowed.
- 6) ☒ Claim(s) 14 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

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DETAILED ACTION

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on January 21, 2004 has been entered.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent 4,979,200 to Umemoto et al. and further in view of U.S. Patent 4,574,102 to Arakawa et al.

Regarding claim 14 Umemoto discloses (column 1 lines 58-68, column 2 lines 1-5) a radiation image conversion panel (radiographic intensifying screen) comprising phosphor layers containing stimuable phosphors (X-ray phosphors) and binder resin where the binder resin is unevenly distributed in the phosphor layer so that the amount of the binder resin to the stimuable phosphor in the uppermost layer (in the vicinity of the protective layer) is greater than that of the binder to the phosphor in the remainder

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of the phosphor layers. Umemoto further discloses (column 3 lines 25-30) that in order to obtain adequate adhesive strength between the uppermost phosphor layer and the protective layer the proportion of binder resin to stimuable phosphor is preferably at least 4% by weight of the entire phosphor layers which is certainly more than 0.5 wt.% as claimed.

Claim 14 differs from Umemoto in that Umemoto does not exemplify the thickness of the uppermost layer is decreased relative to the layer beneath the uppermost layer.

Arakawa in analogous art of radiation image panel discloses (column 3 lines 31-60, Fig. 1) a radiation image storage panel comprising a lower phosphor layer with mixing ratio of binder to stimuable phosphor smaller than the mixing ratio of the same in the adjacent upper layer. Arakawa discloses that the bonding strength between the upper phosphor layer and the protective film is prominently enhanced by varying the mixing ratio of the binder to the stimuable phosphor increased in the region of $1/5$ thickness (upper phosphor layer) and the mixing ratio is decreased to a minimum within the region of depth from $1/5$ to $4/5$ which can be considered as the lower phosphor layer, the depth being expressed in terms of relative distance from the protective film-side surface. Hence the upper layer has a decreased thickness of $1/5$ relative to thickness of $3/5$ of the lower phosphor layer. Furthermore Arakawa discloses (column 2 lines 34-39) that the radiation image storage panel provides an image of decreased sharpness as the mixing ratio of the binder to the stimuable phosphor in the phosphor layer increases. Hence decreased thickness of the upper phosphor layer having high

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mixing ratio of the binder to stimuable phosphor relative to the adjacent lower layer results in increased sharpness of the image.

Therefore it would have been obvious to one of ordinary skill in the art at the time of invention to include the thickness of the uppermost phosphor layer having high mixing ratio of binder to stimuable phosphor decreased relative to the layer beneath of the radiation image conversion panel of Umemoto et al. as taught by Arakawa et al. for providing increased sharpness of the image.

Allowable Subject Matter

Claims 1,3-8,10,12 are allowed over the prior art of records.

The following is an examiner's statement of reasons for allowance:

Regarding claim 1 the prior art of record fails to teach or suggest a radiation conversion panel having all the limitations as claimed in claim 1, particularly the limitation comprising the thickness of the uppermost layer increased relative to a layer beneath the uppermost layer.

Claims 3-8,10 and 12 are allowable for the reasons given in claim 1 because of their dependency status from claim 1.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably

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accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sikha Roy whose telephone number is (703) 308-2826. The examiner can normally be reached on Monday-Friday 8:00 a.m. – 4:30 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nimeshkumar D. Patel can be reached on (703) 305-4794. The fax phone number for the organization is (703) 308-7382.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

S.R.
Sikha Roy
Patent Examiner
Art Unit 2879

Ashok Patel
ASHOK PATEL
PRIMARY EXAMINER